

I/O Test™ is a Unix™ based software package featuring a suite of tools that enable system administrators to measure performance, test reliability, and troubleshoot any SCSI and Fibre disk device or partition. Because I/O Test is simple to run and measures raw I/O data, the program is quickly becoming an industry standard for I/O benchmarking tests. I/O Test objectively compares the performance of various storage devices such as hard disks, RAID systems, or solid-state disk (SSD) systems. I/O Test also helps to ensure that all storage devices are installed properly and performing at peak levels. The I/O Test software package includes three distinct applications: (1) A benchmarking tool; (2) An exerciser and reliability tool; and (3) A maintenance and diagnostic tool.

Benchmarking Tool

The benchmarking application is a useful analysis tool that measures the relative performance of any storage device. The benchmark test can be run in three different modes: read; write; or a combination of reads and writes. The benchmark test objectively demonstrates performance by measuring transfer rates and I/Os per second while the system is under load. This enables system administrators to run the same tests on a variety of storage devices and then compare the results of each to determine which storage devices are providing optimum performance.

The benchmarking tool can also be run after installing a new device to ensure that the device is installed correctly and is performing as expected. As part of our comprehensive sales support process, Solid Data uses the benchmarking tool after installing any Solid Data product to ensure our systems are running at peak levels and delivering the highest performance possible to our clients.

Exerciser/Reliability Tool

The exerciser tool tests the reliability of any storage device by performing random reads, writes, and memory comparisons across the entire disk using varying transfer sizes and random data. The exerciser tool's purpose is not to measure performance—it is a brute exerciser that checks the reliability of the device by saturating it with I/Os. Running the exerciser for a minimum of one half hour after installation or repair of a storage device demonstrates the reliability of the device and highlights any potential problems.

Periodic status messages describe the tests that are running and the results, allowing the system administrator to easily monitor progress. In mission-critical environments, the exerciser tool performs an important function—using the exerciser to test reliability can prevent data corruption or data loss by reducing the possibility of loading critical data onto a defective or unreliable storage device.

Maintenance/Diagnostic Tool

The maintenance tool includes a variety of tests for troubleshooting. These tests can be run while the system remains online, enabling the system administrator to diagnose the state of the storage device without disrupting the system and impacting users. The array of diagnostic tests include: a reliability test; quick read test; write block test; scan block test; hex block dump; and byte editor. Solid Data utilizes the maintenance tool as part of our extensive quality assurance program to thoroughly test all of our systems prior to leaving our manufacturing site. This exhaustive testing has resulted in an annual failure rate of less than 1% in the field and over two million hours MTBF at the system level.

Running this array of tests helps system administrators to troubleshoot storage devices and determine what form of repair or replacement may be needed. The maintenance tool's ability to troubleshoot I/O system problems to the device level enables system administrators to shorten repair times and get their systems back to peak efficiency as quickly as possible. As part of our comprehensive service options, Solid Data can provide assistance by running these tests remotely (if I/O Test is installed), enabling us to diagnose and troubleshoot your system for you.

Technical Specifications

- Runs on Unix
- Available via anonymous FTP from [ftp.soliddata.com/iotest](ftp:soliddata.com/iotest) or via the Web at www.soliddata.com/products
- An ANSI C compiler is required to build the program. I/O Test can be compiled with GCC, EGCS, or any manufacturer-supplied ANSI compliant compiler.
- I/O Test includes source files, an overview, a sample makefile, and a README file.

